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ASX
ANNOUNCEMENT

31 October 2024

Bulk Sample Drilling for Cyclone Zircon Project Complete

- **DRX successfully completes 106 Air-core holes for 3,278 meters collecting 11 tonnes of sand containing heavy minerals from the Cyclone Zircon Project**
- **The drilling produced bulk sample for new metallurgical testwork to process products and confirm previous drilling results for potential customers and investors**
- **Diatreme aiming to unlock shareholder value from Cyclone, one of the largest undeveloped zircon-rich heavy mineral sands deposits in the Eucla Basin.**

Emerging silica sands developer, Diatreme Resources Limited (ASX: DRX) has completed an air-core drilling program for its Cyclone Zircon Project in Western Australia, seeking to update metallurgical testwork and confirm previous drilling results from the zircon-rich heavy mineral sands project.

The program collected in excess of 11 tonnes of sand containing heavy minerals from the Cyclone Deposit, representing the first three years of planned production under the current mine design. The program collected sufficient samples for processing testwork which will use the latest equipment and test recent innovative processes and advancements to produce products and confirm drilling results for potential customers and investors.

Diatreme's CEO, Neil McIntyre commented: *"This new drilling program will enable further metallurgical assessment of the Cyclone deposit's amenability to the latest new processing technologies, and ensure the value of Cyclone's heavy mineral sands product suite is maximised for both market acceptability and pricing".*

"The Cyclone project with primary permitting already in place is well positioned for development, given declining global supply and continued demand for zircon. We look forward to progressing the testing results and unlocking value for shareholders, adding to our flagship low iron, high purity silica sand projects in North Queensland."

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Fig 1 : Cyclone project regional setting

Background

Discovered in 2007, Cyclone is located along the Barton shoreline within the Wanna Lakes area of the northern Eucla Basin. It is 25 kilometres from Western Australia's state border with South Australia and 220 kilometres north of the transcontinental railway. Diatreme's wholly owned subsidiary, Lost Sands Pty Ltd, holds Mining Lease M69/141 over the Cyclone deposit.

The Cyclone project was granted a Mining Lease in 2014 which followed the signing of a Project Agreement with the traditional owners, the Spinifex People. In 2017, the project received approval from the Minister for Environment allowing for the development of a mineral sands mine and associated infrastructure. A Definitive Feasibility Study announced in 2018 demonstrated the project's potential as the largest undeveloped, zircon-dominant heavy mineral sands project in the world-class Eucla Basin.

Previous exploration and metallurgical testwork

In 2007, Diatreme completed its first air-core drilling program at Wanna Lakes. The Cyclone deposit was discovered early in the program, with Cyclone located at the southeast end of E69/1920. This tenement was relinquished following grant of the mining lease over the Cyclone project area. In 2011 there was a small program of resource definition drilling over the Cyclone deposit and regional drilling to the north and north-east of Cyclone was successful

in identifying low grade mineralisation associated with beach sediments. Resource definition drilling continued in 2012 over the Cyclone deposit.

Metallurgical testwork was completed on a 7-tonne bulk sample in 2011 and a 12-tonne bulk sample in 2013. The 2011 bulk sample was collected from holes drilled across the entire Ore Reserve to produce a representative sample suitable for Pre-Feasibility Study (PFS) quality process design, whilst the 2013 bulk sample was collected from holes drilled within the planned first two years of production to produce a representative sample suitable for testing the PFS process on a large sample suitable for a Definitive Feasibility Study (DFS).

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2024 drilling program

DRX completed the 2024 Cyclone drilling program as planned drilling 106 holes, for 3,278m of NQ sized air-core. Lithological logging and sampling was conducted on 1m intervals and samples will be composited to form both geochemical samples for assaying and the bulk sample process testwork.

Drilling focussed on 4 existing grid lines within first three years of production to create further confidence in the reserve through twinning and infilling existing holes.

GPS Drilling completed the program on budget and schedule.

Process Design Testwork

Diatreme is currently working with Mineral Technologies (MT) on the details for a metallurgical testwork program that will be used for the design of an improved flowsheet for processing the Cyclone ore into zircon and titanium dioxide (TiO2) products. The dominant mineral in the Cyclone assemblage is zircon which accounts for approximately 50% of the minerals in the heavy mineral concentrate that will be produced by the wet concentrator plant (WCP), and 75% of the value of all final products that will be produce from a mineral separation plant (MSP). Previous testwork by MT identified opportunities that required additional sampling and testwork and would involve a different approach using recent technological developments with potential to improve zircon recovery and quality. This will be the focus of the testwork with potential for improving the project economics by producing an increased quantity of higher quality zircon.

Previous testwork produced two high TiO2 (HiTi) products, a non-magnetic HiTi with +85% TiO2 and a magnetic HiTi with +65% TiO2. Cyclone has an unusual suite of TiO2 minerals with a range of TiO2 content from 60% for altered ilmenite to 95% for rutile. The testwork currently being planned will use a different processing procedure and is expected to improve the recovery and quality of the TiO2 products. Another feature of the testwork is production of

a single TiO2 product to a specification provided by a potential customer and assessing other options for HiTi products for use by other end users.

The Cyclone Project feasibility is currently being evaluated based on production and export of heavy mineral concentrate (HMC). The value of HMC is dependent on the assemblage of minerals produced by the WCP, the cost to produce the final products from a MSP, and the quality of the final zircon and TiO2 products. The results of this testwork will result in optimised flowsheets for the production of HMC and final products. This testwork which is expected to take up to six months to complete will produce product samples for assessment by potential customers and the necessary cost and revenue inputs for an updated feasibility study.

Diatreme will keep the market informed as results from testing are available.

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Fig 2 : Cyclone drilling program on site

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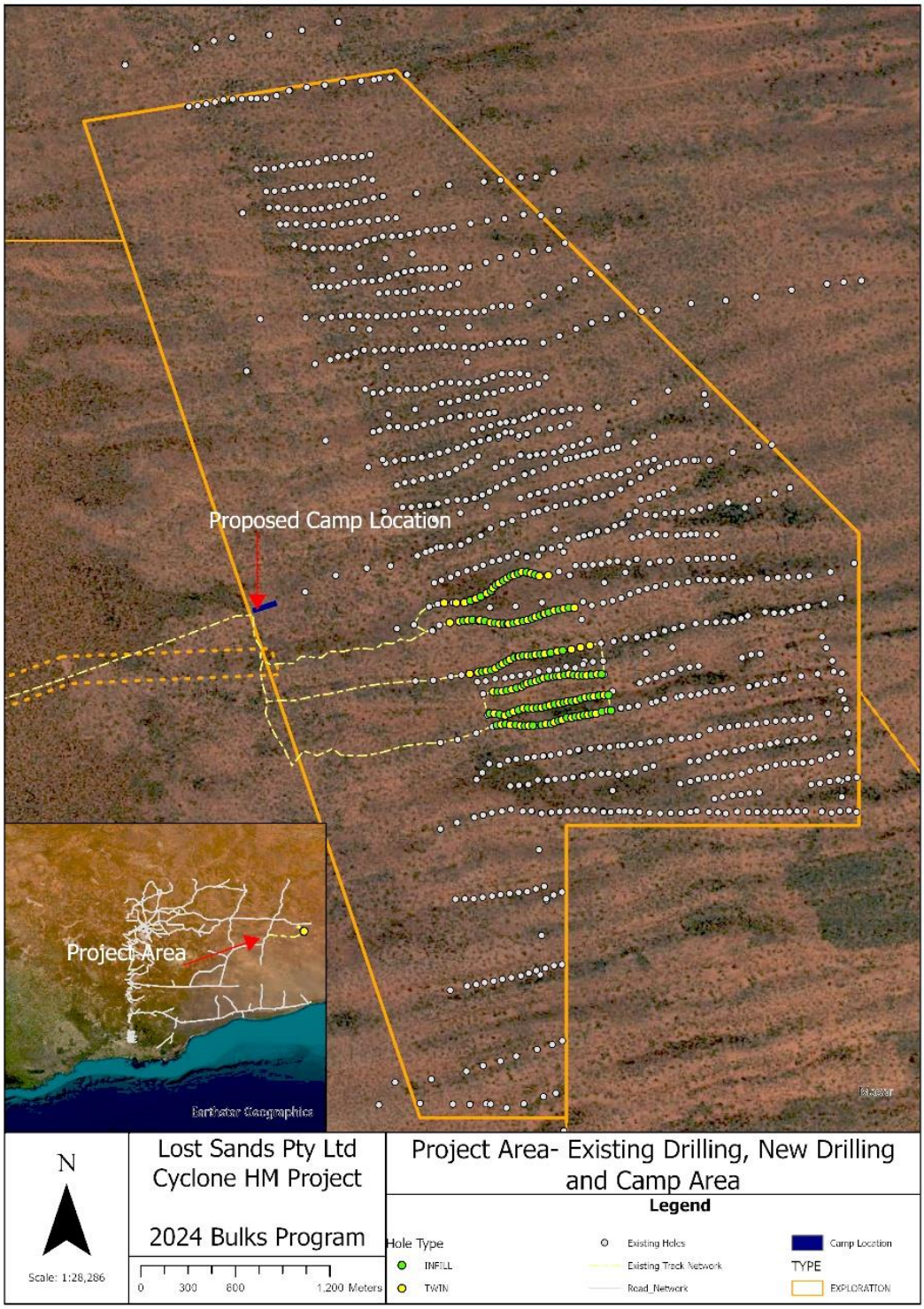

Figure 3: Existing project holes (grey) and planned 2024 holes (green), together with the camping area

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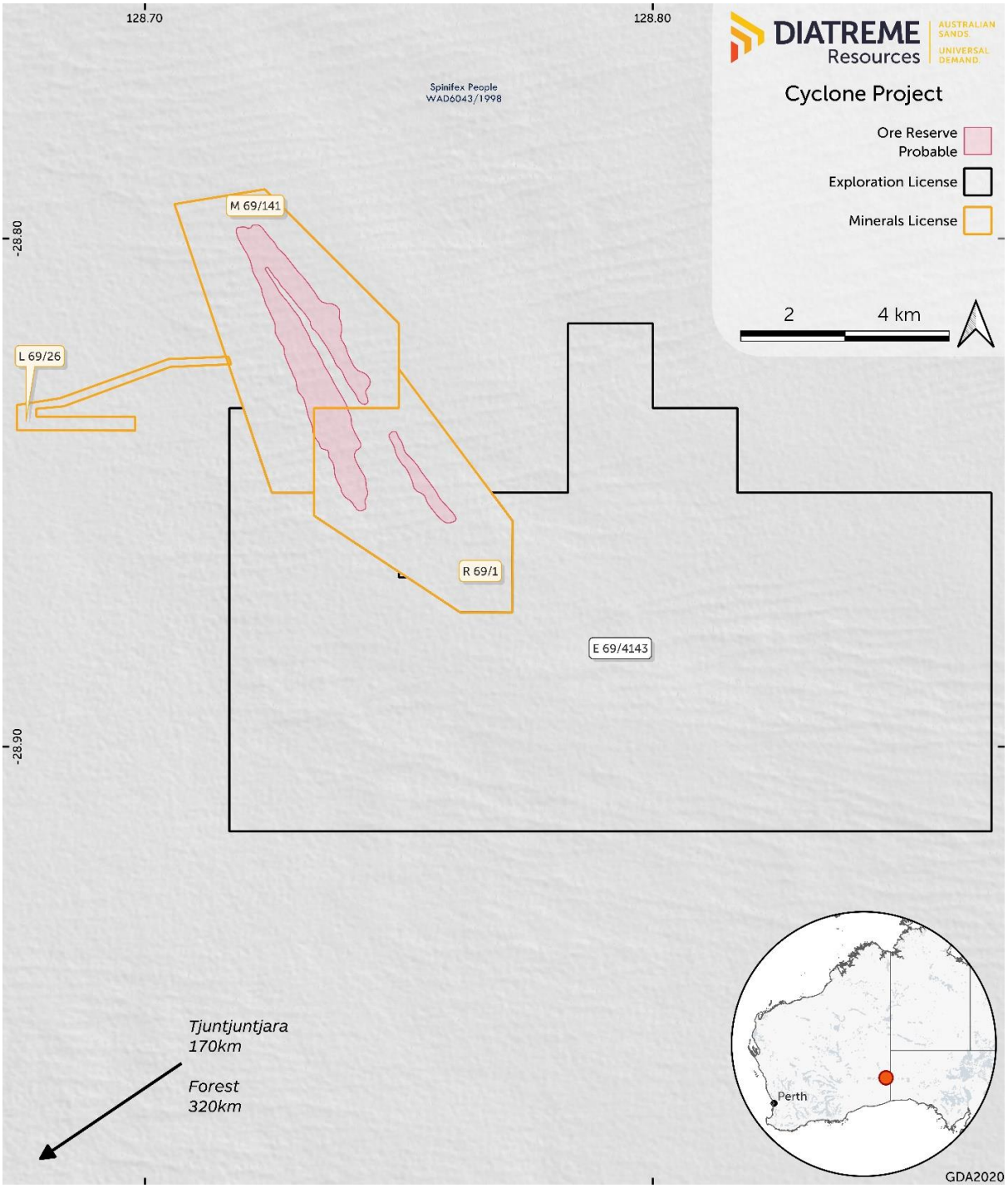

Figure 4: Cyclone Project location, WA

This announcement is authorised for release by the Board.

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About Cyclone Zircon Project

Discovered in 2007, the Cyclone Zircon deposit is located along the Barton shoreline within the Wanna Lakes area of the northern Eucla Basin, 25 kilometres from Western Australia's state border with South Australia and 220 kilometres north of the transcontinental railway.

In November 2014, Western Australia's Department of Mines and Petroleum granted a Mining Lease (M69/141) for the project, which followed the signing of a Project Agreement with the traditional owners, the Spinifex People. In January 2017, the project received final ministerial consent allowing for the development of a mineral sands mine and associated infrastructure.

A Definitive Feasibility Study was completed in November 2018 by China ENFI Engineering Corp., part of the leading China Minmetals group, reaffirming Cyclone's potential as the largest undeveloped zircon dominant heavy minerals project in the world-class Eucla Basin.

About Diatreme Resources

Diatreme Resources (ASX:DRX) is an emerging Australian producer of mineral and silica sands based in Brisbane. Our key projects comprise the Northern Silica Project and Galalar Silica Sand Project in Far North Queensland, located next to the world's biggest silica sand mine at Cape Flattery.

In Western Australia's Eucla Basin, Diatreme's Cyclone Zircon Project, *with all primary permitting in place,* is considered one of a handful of major zircon-rich discoveries of the past decade.

Diatreme also holds the Clermont Copper-Gold Project located in central Queensland along with new subsidiary company Metallica Minerals Limited (MLM).

Diatreme has an experienced Board and management, with expertise across all stages of project exploration, mine development and project financing together with strong community engagement skills.

Global material solutions group Sibelco is Diatreme's development partner on its Queensland silica projects portfolio. Sibelco has completed a two-tranche investment of $35 million taking its total project interest to 26.8%, with the balance (73.2%) held by Diatreme. In addition, Sibelco made a $13.97 million investment at the corporate level.

Diatreme's silica sand resources will contribute to global decarbonisation by providing the necessary high-grade silica for use in the solar PV industry. The Company has a strong focus on ESG, working closely with its local communities and all other key stakeholders to ensure the long-term sustainability of our operations, including health, safety and environmental stewardship.

For more information, please visit www.diatreme.com.au

ASX releases referenced for this release:

- 30 July 2024 – "Quarterly Activities/Appendix 5B Cash Flow Report"
- 15 November 2018 – "Positive DFS confirms Cyclone Zircon Project to proceed"
- 10 January 2017 – "Cyclone Project secures final ministerial approval"
- 24 November 2014 – "Cyclone Project Mining Lease approved"
- 17 November 2014 – "Cyclone Project Traditional Owners agreement signed"

Diatreme confirms that it is not aware of any new information or data that materially affects the information included in the original releases and that all material assumptions and technical parameters underpinning the estimates in the original releases continue to apply and have not materially changed. Diatreme confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original releases.

Competent Person Statement

The information in this report, insofar as it relates to Mineral Resources at the Cyclone Project is based on information compiled by Mr Ian Reudavey, who was a full-time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'The Australasian Code for Reporting of Exploration Results,

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Mineral Resources and Ore Reserves'. Mr Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report, insofar as it relates to Ore Reserves at the Cyclone Project is based on information compiled by Mr Phil McMurtrie, who is a director of Tisana Pty Ltd (a consultant to Diatreme Resources Limited), and a Member of the Australasian Institute of Mining and Metallurgy. Mr McMurtrie has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr McMurtrie consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

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